

connected to the reservoir and disposed in the single circuit to pump hydraulic fluid to the header circuit.

In a second embodiment in accordance with the present invention, there is an integrated combine reel hydro-mechanical drive system for use in an agricultural vehicle, the drive system being a single integrated hydraulic circuit containing a hydraulic fluid and including a hydraulic reservoir, the single hydraulic circuit comprising: a hydraulic header circuit connected to the reservoir and supplying hydraulic fluid to activate a header implement and a reel of the header implement; and a variable pump connected to the reservoir and disposed in the single circuit to pump hydraulic fluid to the header circuit.

Various other embodiments are described in the dependent claims. A main advantage to the embodiments of the present invention is that an integrated combine reel hydro-mechanical drive system is provided that economically powers multiple hydraulic systems by using one single integrated hydraulic circuit. Furthermore, the use of multiple valve stacks in the embodiments of the dependent claims adds the advantage of keeping the hydraulic load on the circuit manageable despite the demands of so many hydraulic devices. In addition, the use of a load sensing variable pump gives the pump the capacity to compensate the rate of hydraulic fluid flow for the sensed demand within a portion of the main hydraulic circuit.

### **The Rejection**

Claims 1-17 stand rejected under 35 U.S.C. 103(a) as unpatentable over Ziegler et al. (U.S. Patent 4,967,544) in view of Vogelaar (U.S. Patent 2,766,572).

Applicant respectfully traverses the rejection and requests reconsideration of the application for the following reasons.

**Applicant's Arguments**

The Ziegler et al. reference discloses an “automatic speed control system for a harvesting assembly” for an agricultural combine (10) that includes the hydraulic circuit shown in Figure 2. The hydraulic circuit includes a hydraulic reservoir (unlabeled) that provides hydraulic fluid to a pump (61) for a reel or belt pickup drive that drives reel (23). The hydraulic circuit also includes a main hydraulic pump (62) that operates a hydraulic motor (18) of the transmission (19), which is coupled to drive wheels (14). As admitted by the Examiner, Ziegler et al. does not teach that the hydraulic circuit operating the reel (23) also supplies “hydraulic fluid to activate a steering mechanism” and the “variable pump...disposed in the single circuit to pump hydraulic fluid to the header circuit” as recited in claim 1 (Office Action, dated February 28, 2003, page 2, lines 14-16). Ziegler et al. also does not teach, or even suggest, a “header circuit...supplying hydraulic fluid to activate a header implement and a reel of the header implement” and the “variable pump” recited in claim 10.

The Vogelaar reference discloses a “multi-valve hydraulic control system for combines” that includes a hydraulic circuit as shown in Figure 1. The hydraulic circuit includes a reservoir (86) that provides fluid to pump (80), which in turn pumps the fluid to the hydraulic circuit. The hydraulic circuit motors (24), (36) and (60) provide power to operate various parts of the self-propelled combine. Motor (60) is controlled by steering wheel (42) and motor (60) provides the power for steering the wheels (14). Motor (24) is controlled by lever (44) and adjusts the position of header (16), (col. 2, lines 58-62). Motor (36) is controlled by lever (46) and operates to change the position of sheave (32) on bell crank (34) to change the output ratio between sheave (32) and output shaft (28), (col. 2, line 63 to col. 3, line 9). The Vogelaar reference does not teach a “variable pump” as recited in claims 1 and 10. The Vogelaar reference does not teach “an integrated combine reel hydro-mechanical drive system” as recited in claims 1 and 10, and as described on page 1, lines 4-10 and page 6, line 7 to page 7, line 10, of the instant specification.

As mentioned above, neither the Ziegler et al. reference, nor the Vogelaar reference, teach or even suggest, a “variable pump” in a hydraulic circuit. The Examiner states that “it is well-known that variable pumps can be used in the place of flow control valves in order to meter the supply of hydraulic fluid to a circuit” (Office Action, dated February 28, 2003, page 3, lines 1-3). This statement is an “Official Notice” as described in MPEP 2144.03. Applicant respectfully traverses the Official Notice because the teaching is so broad as to lack substance. It is now the Examiner’s burden, according to MPEP 2144.03, to produce a reference that teaches both the variable pump and a suggestion for its combination within and use in the hydraulic circuit taught by Ziegler, or to withdraw the rejection.

In view of the Examiner’s apparent Official Notice, it appears that independent claims 1 and 10 actually stand rejected under 35 U.S.C. 103(a) as unpatentable over the Ziegler et al. reference in view of the Vogelaar reference and the teachings of the Examiner’s Official Notice. However, Applicant traverses this rejection as a mere amalgamation of the art because the Examiner has not shown a reasonable motivation to combine the teachings of the prior art.

Courts have held that a proper rejection under 35 U.S.C. 103(a) requires showing (1) the prior art would have suggested to those of ordinary skill in the art that they should make the claimed device, (2) the prior art would also have revealed that in so making, those of ordinary skill in the art would have a reasonable expectation of success, and (3) both the suggestion and the reasonable expectation of success must be founded in the prior art, not in applicant’s disclosure. In re Vaeck, 20 U.S.P.Q.2d 1438, 1442. Furthermore, it is well established in patent law that a patentable claim may even consist of all old elements when it is the combination of the old elements that is novel and patentable. Clearstream Wastewater Systems v. Hydro-Action, Inc., 54 U.S.P.Q.2d 1185, 1189.

In the present case, the Ziegler et al. reference discloses a hydraulic circuit that drives a transmission for a harvesting machine and its reel. The Vogelaar reference discloses a hydraulic circuit that operates a steering mechanism, positions a header, and adjusts the drive ratio between an

output shaft and a sheave. The Official Notice teaches the use of a variable pump to meter the supply of hydraulic fluid to a circuit. There is no suggestion founded in the prior art to properly motivate one skilled in the art to make the proposed combination of the three prior art teachings. If there were, the Examiner should be able to identify, in the prior art references, where the suggestion is found. Applicant asserts that claim 1 may consist of all old elements, but that it is the combination of these old elements that is novel and patentable because the prior art does not reasonably suggest to those skilled in the art to make the Applicant's device.

Applicant makes the following additional remarks with respect to the dependent claims. Claims 8 and 17 recite that the "header circuit further comprises a load sensing line connected to the steering circuit, the implement circuit, and to the variable pump so a hydraulic load carried by the header circuit is sensed by the variable pump, and the variable pump operates to vary the amount of hydraulic fluid pumped in response to the sensed hydraulic load." Neither the Zeigler et al. reference, nor the Vogelaar reference, teach "a load sensing line" as recited in claims 8 and 17. Specifically, Ziegler et al. teaches a "reel speed electronic controller" (100), in Figure 2, that is connected to magnetic speed sensors (120) and (124), (col. 6, lines 50-59). However, the "load sensing line" recited in claims 8 and 17 of the present invention is connected to the "variable pump" so that a hydraulic load carried by the header circuit is "sensed by the variable pump." This feature is not taught by the prior art of record.

### **Conclusion**

Claims 1-17 presently stand rejected under 35 U.S.C. 103(a) as unpatentable over the Ziegler et al. reference in view of the Vogelaar reference and the teachings of the Examiner's Official Notice. Applicant has timely traversed the Examiner's Official Notice; therefore, the Examiner must provide a reference in support of the Official Notice that teaches both the subject matter of the Official Notice and a motivation to properly combine this subject matter to the teachings of the other

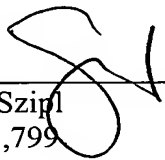
two references. Applicant has also pointed out that the Examiner has not shown where in the prior art references there is the suggestion to make Applicant's claimed device.

Lastly, Applicant has shown that none of the prior art references teach, or even suggest, the load sensing line having the features recited in claims 8 and 17.

For all of the above reasons, claims 1-17 are allowable and a prompt notice of allowance is earnestly solicited.

Respectfully submitted,

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